

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

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UNITED STATES OF AMERICA	:	
	:	
v.	:	19-cr-850 (JSR)
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PARKER H. PETIT and WILLIAM TAYLOR,	:	
	:	
Defendants.	:	
.....X		

**REBUTTAL EXPERT REPORT OF ARTUR MINKIN, PH.D.**

**I. Assignment.**

1. I filed an expert report in this matter on February 9, 2021 (“the Minkin Report” or “my first report”). My qualifications and curriculum vitae are included in that report, as is a description of the case and the parties involved. I have been asked to review the expert report submitted by Dr. Atanu Saha on February 12, 2021 (“the Saha Report”). I was asked by the counsel for the United States Attorney’s Office in the Southern District of New York (“U.S.A.O. SDNY”) whether any of my opinions contained in the Minkin Report have changed in light of the Saha Report. I was also asked to identify conceptual flaws and factual errors in the Saha Report.

2. In forming my opinions in this rebuttal report, I relied on the same set of documents identified in my first report, as well as the Saha Report.

**II. Summary of the Saha Report.**

3. Dr. Saha’s critique of the Minkin Report can be summarized as follows:

- a. There is a lack of association (or even a negative association) between revenue-related news and stock price movements, both in the case of MiMedx and, more generally, in published research;<sup>1</sup>

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<sup>1</sup> The Saha Report, pp. 5, 6, 13-19. The Saha Report’s language on this point varies. On p. 5, for example, he criticizes what he incorrectly calls my “assumption” of a “one-to-one relationship between revenue inflation and MiMedx’s share price inflation.” On p. 15, he incorrectly claims that the “empirical evidence demonstrates that not

- b. The February 20, 2018 MiMedx disclosure is inappropriate for estimating the inflation due to the fraud because it is confounded;<sup>2</sup> and
  - c. The February 20, 2018 MiMedx disclosure is inappropriate for estimating the inflation due to the fraud because the magnitude of the revenue inflation was not revealed on this date.<sup>3</sup>
- Instead, Dr. Saha proposed March 17, 2020 as a more appropriate corrective disclosure.

### III. Summary of Opinions.

4. After reviewing the Saha Report, none of the opinions and results set forth in my first report have changed. In fact, after correcting the errors in the Saha Report related to the three main critiques of my first report, I concluded that Dr. Saha's analysis supports my opinions.

5. With respect to the first critique that there is a lack of association between MiMedx's revenue-related news and stock price movements, I determined that Dr. Saha's analysis contains factual and methodological errors. Once I corrected these errors, I concluded that the results show a *positive* relationship between revenue surprises and stock price changes on the impact dates of such announcements. My results are consistent with vast academic research showing that unexpected revenue performance is followed by stock price changes in the direction of the revenue surprise, i.e., unexpected revenue outperformance is followed by stock price increases and unexpected revenue underperformance is followed by stock price declines.

6. With respect to Dr. Saha's second critique that the February 20, 2018 announcement is confounded, I find no evidence that the disclosure is confounded and Dr. Saha provides no valid evidence of this in his report. On the contrary, MiMedx's February 20, 2018 disclosure is the first public announcement of "an internal investigation into current and prior-period matters relating to allegations

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only is the relationship between revenue guidance beat/miss and price response not one-to-one, but on average it is negative." On p. 17, he asserts the unfounded claim that "[t]he lack of an association between earnings/revenue-related news and stock price movements is not unique to MiMedx... the absence of a quantifiable relationship is widely documented in published research." I disagree with all of these points as laid out in further detail in section IV of my report.

<sup>2</sup> The Saha Report, pp. 5-8, 23-34.

<sup>3</sup> The Saha Report, pp. 5, 7-8, 35-37.

regarding certain sales and distribution practices.”<sup>4</sup> The announcement is directly related to the allegations of fraudulent revenue inflation proven at trial.

7. Dr. Saha’s critique that using the February 20, 2018 announcement as a corrective disclosure is inappropriate because the magnitude of the revenue inflation was unknown until March 17, 2020 is incorrect. However, based on my experience, it is standard practice in my profession to use partially corrective disclosures when measuring price inflation. In fact, Dr. Saha has agreed that “the disclosure of the misrepresentation can be partial” in a published paper he co-authored.<sup>5</sup> Nevertheless, when I implement Dr. Saha’s chosen methodology and correct for his errors,<sup>6</sup> I determine that investor loss ranges from \$40.5 million to \$80.5 million, exceeding my harm estimate of \$34.6 million described in more detail in my first report.

**IV. Dr. Saha’s analysis of the effect of revenue announcements on stock price changes contains conceptual and factual errors. Once I corrected these errors, my results show that revenue surprises are followed by stock price changes in the direction of the revenue surprise, a result not only consistent with common sense but also well documented in the vast academic literature on the subject.**

8. In Section II. B of his report, Dr. Saha first conducts an event study on MiMedx stock returns from 2013 to 2017. Next, Dr. Saha uses the 19 quarterly revenue announcements dates within the period Q1 2013 through Q3 2017 to test whether MiMedx’s guidance surprises are reflected in stock price changes. Due to errors in his analysis, Dr. Saha incorrectly finds a lack of positive association between revenue guidance surprises and stock price changes.

9. Dr. Saha makes conceptual and factual errors that render his opinions flawed and unreliable. Dr. Saha incorrectly ignores the upper bound of the revenue guidance in his calculation of guidance surprises and fails to exclude announcement dates that are confounded by non-revenue news from his analysis. In addition, Dr. Saha uses the wrong dates for 8 of 19 revenue announcements dates.

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<sup>4</sup> PR Newswire, February 20, 2018, 7:30am.

<sup>5</sup> Allen Ferrell and Atanu Saha, "The Loss Causation Requirement for Rule 10b-5 Causes of Action: The Implications of *Dura Pharmaceuticals, Inc. v. Broudo*," *The Business Lawyer*, 2007, pp. 163-186.

<sup>6</sup> The Saha Report, pp. 35-37.

Once I corrected these errors, Dr. Saha's methodology shows that revenue surprises are followed by stock price changes in the direction of the surprise. My results are consistent with common sense and the vast academic literature on the subject.

**A. Dr. Saha incorrectly ignores the upper bound of the revenue guidance in his calculation of guidance surprises and fails to exclude announcement dates that are confounded by non-revenue news from his analysis.**

10. In his Exhibit 2B, Dr. Saha makes two fundamental mistakes. First, he incorrectly calculates the "Guidance Surprise" as the percentage difference between the reported revenue and the lower bound of the guidance. By ignoring MiMedx's guidance range and using only the lower bound to calculate his "Guidance Surprise", Dr. Saha introduces two kinds of errors into his analysis. The first error is that Dr. Saha's approach leads to incorrectly identifying positive "Guidance Surprises" when the company's reported revenue falls in between the lower and upper bounds of the guidance. This issue affects six announcements analyzed by Dr. Saha – I marked these six instances by "Met Guidance" in the "Corrected Guidance Surprise" column in Exhibit 1, which is a partially corrected version of Dr. Saha's Exhibit 2B. The second error that Dr. Saha introduced into his analysis is from using only the lower bound of the revenue guidance to calculate the magnitude of "Guidance Surprises". This makes positive revenue surprises —when reported revenue exceeds the upper revenue bound— appear larger. I corrected this error by recalculating positive revenue surprises using the upper revenue bound in the "Corrected Guidance Surprise" column in Exhibit 1.<sup>7</sup>

11. The second fundamental mistake that Dr. Saha makes, is that he fails to exclude announcements that are confounded by news unrelated to MiMedx revenue surprises when he is analyzing the relationship between such revenue surprises and adjusted price changes. In fact, Dr. Saha included in his analysis three days confounded by non-revenue information: 7/30/2015, 10/29/2015, and 1/11/2016 (see column "Confounded Announcement?" in this report's Exhibit 1). Given Dr. Saha's

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<sup>7</sup> When revenue guidance is met there is no unique way of calculating a relative guidance surprise. When revenue surprises that meet guidance are assigned a value of zero, the ratio of price reaction to surprise cannot be calculated due to the denominator being zero. Hence, I omit these instances from my analysis when correcting Dr. Saha.

detailed discussion of confounding news and the content of Exhibit 3 and Table 2 of his report, Dr. Saha is not only aware of what confounding news is in general but is also particularly aware that two announcement dates, 7/30/2015 and 10/29/2015, are confounded by non-revenue news. In addition, after the market close on 1/10/2016, MiMedx announced its revenue results for Q4 2015 and its acquisition of Stability Biologics<sup>8</sup> along with a commentary on the effect of the acquisition on MiMedx's outlook for 2016.<sup>9</sup> Hence, the stock price reaction on 1/11/2016 reflects a reaction to both revenue and non-revenue disclosures. Including the three days with confounding announcements in his analysis was incorrect and led Dr. Saha to an erroneous conclusion. Therefore, when correcting Dr. Saha's Exhibit 2B, I excluded the three confounded days from the analysis.

12. After excluding the three confounded days from the analysis and correcting the two errors stemming from Dr. Saha's calculation which ignores the upper bound guidance, I recalculated Dr. Saha's average ratio of price reaction to guidance surprise. The results of my calculations are reported in the column "CORRECTED Ratio of Price Reaction to Surprise" on my Exhibit 1. Exhibit 1 shows that, across the 16 remaining revenue dates used by Dr. Saha, the average ratio<sup>10</sup> between the percentage price change and the percentage CORRECTED guidance surprise is positive and equals 3.68.<sup>11</sup> Thus, contrary

<sup>8</sup> PR Newswire, 1/10/2016 at 7:18 pm and PR Newswire, 1/10/2016 at 7:06 pm.

<sup>9</sup> The PR Newswire article included PETIT's comments: "Parker H. "Pete" Petit, Chairman and CEO, said, "... We believe the acquisition of Stability Biologics will lead to even more rapid growth in this SSO sector" and "Today, the Company also issued a press release announcing its acquisition of Stability Biologics. Included in that press release were the Company's revised expectations for 2016 based on the acquisition."

<sup>10</sup> The ratio can only be computed in 13 out 16 revenue announcement dates.

<sup>11</sup> In my opinion, the average ratio of percentage stock price change to percentage revenue surprise is an inappropriate measure for the purposes of describing a relationship between revenue surprises and stock price changes for at least two reasons. First, the measure is not robust and even small changes in MiMedx stock price or the market and industry indexes can have an outsized effect on the value of the ratio when the guidance beat or miss is very small. For example on July 31, 2013 Dr. Saha reports \$20,000 of positive revenue guidance surprise for Q2 2013. On that day, MiMedx's stock price declined by just 1 cent or 0.16% to \$6.26, but adjusted for market and industry movements the price drop reported by Dr. Saha is -1.2%, producing the largest absolute value of the ratio in Dr. Saha's Exhibit 2B, negative 10.88. In contrast, the Q1 2016 revenue guidance miss of \$2.13 million on April 11, 2016 which was followed by an adjusted price change of -8.4%, only results in a 2.11 price change to revenue surprise ratio. Second, as the two examples illustrate, computing the average of 19 quarterly ratio values provided by Dr. Saha introduces another distortion called Jensen's inequality bias. This bias, well known in statistics and probability theory, makes Dr. Saha's calculation inappropriate for the purpose of understanding the relationship between revenue surprises and stock price. Setting aside the problems with comparing percentage revenue surprises to percentage stock price changes, and correcting for the second bias, the results continue to show a positive average ratio of 1.18 which further supports the positive association between these two variables under Dr. Saha's erroneous analysis.

to Dr. Saha's erroneous result and based on Dr. Saha's own methodology, the empirical evidence demonstrates that the relationship between revenue surprises and price responses is *positive*.

13. It is appropriate to focus on the announcement days with statistically significant abnormal returns when measuring the stock price reaction to surprises. Adjusted price changes that are not significant can be attributed to random chance alone and are not different from zero in a statistical sense. Dr. Saha's errors lead him to find that only 21%<sup>12</sup> of revenue surprise dates have statistically significant adjusted price reactions in the same direction.<sup>13</sup> A key result in Exhibit 1 is that 100% of the dates with statistically significant adjusted price changes have price changes in the same direction as the corrected guidance surprises—instead of the 21% erroneously reported by Dr. Saha.<sup>14</sup> Finally, Exhibit 1 shows that the only negative corrected guidance surprise on April 11, 2016 resulted in a statistically significant adjusted price decline.<sup>15</sup>

#### **B. Dr. Saha uses the wrong dates for 8 of 19 revenue announcements dates.**

14. Above and beyond the conceptual errors discussed in the section above, Dr. Saha also made numerous factual errors that render his revenue analysis and conclusion flawed and unreliable. Dr. Saha uses the wrong revenue announcement dates and hence wrong adjusted stock price reactions for 8 of 19 revenue announcements. After correcting Dr. Saha's factual errors, the conclusions as presented in his report, are rendered invalid and completely overturned, buttressing the results of my partial corrections to

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<sup>12</sup> Dr. Saha's 21% rate calculation is misleading. The appropriate rate is 57% or 4 out of 7 if "one were to focus only on the price responses that were statistically significant", see the Saha Report, p. 15.

<sup>13</sup> The Saha Report, p. 15.

<sup>14</sup> All announcement days without confounding news, with a measurable guidance surprise, and with statistically significant adjusted price changes have price changes that are consistent with the direction of the revenue surprise. In one instance, on April 14, 2015, when the company's guidance was met, the adjusted stock price dropped significantly. The stock price decline on that day reflected that the Q1 2015 revenue announcement was below analysts' consensus forecast. Therefore, the results for this day also demonstrate a positive relation between revenue surprises and stock price changes.

<sup>15</sup> The April 11, 2016 adjusted MiMedx stock price drop of 8.4% or \$0.76 following a 4% guidance miss is an informative benchmark response of MiMedx stock price when assessing the value of FY 2015 \$8.26 million revenue overstatement. The overstated revenue results were announced in early 2016, just a few months prior to the April 11, 2016 event. Absent the fraud, the full FY 2015 guidance miss would have been 3.3%, corresponding to a \$0.63 adjusted stock price drop, only \$0.02 lower than the \$0.65 estimate of the per share value of the fraud that I provided in my first report.

his Exhibit 2B.

15. This report's Exhibit 2 is an updated and corrected version of Dr. Saha's Exhibit 2B. My Exhibit 2 shows that information on whether *revenue* missed, met, or beat the guidance was preannounced on 8 out of the 19 quarterly *earnings* announcement dates used by Dr. Saha.<sup>16</sup> Therefore, a statistically significant stock price reaction on these 8 days would measure the effect of other news released on those dates, such as, the full financial statement including earnings results for the quarter or other news discussed on the earnings conference call, separate from news on revenue guidance surprise for the quarter.

16. For example, after the market close on July 13, 2017, MiMedx announced \$76.4 million in revenue for Q2 2017 exceeding the upper bound of the \$73.5 to \$75 million revenue guidance range. However, Dr. Saha incorrectly uses July 27, 2017, the Q2 2017 *earnings* announcement day and the corresponding 1.4% adjusted stock price drop on that day. It is incorrect to use the price reaction to the earnings announcement date when measuring the price effect of revenue surprises if the revenue surprise was preannounced on an earlier date. In fact, the adjusted stock price reaction on July 14, 2017, the correct revenue preannouncement impact date, is positive 6.4% and just below the 95% statistical significance threshold.

17. In order to correct Dr. Saha's factual errors, I first verified whether any of the announcement dates I identified as the first announcements of revenue results were confounded. Specifically, I determined that three revenue announcement days in Exhibit 2 were confounded: 7/30/2015, 10/13/2015, and 1/11/2016.<sup>17</sup> (See column "Confounded Announcement?" in my Exhibit 2.) Two of these dates were already identified as confounded in my Exhibit 1 (7/30/2015 and 1/11/2016).

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<sup>16</sup> In 4 out of the 8 quarters for which Dr. Saha used the wrong date, MiMedx revealed the exact revenue figure in its preannouncement. For the remaining 4 quarters for which Dr. Saha used the wrong date, MiMedx revealed that the revenue had "exceeded" or "slightly exceeded" the guidance upper bound. For this last set of 4 quarters, much of the uncertainty about revenue was revealed in advance of Dr. Saha's announcement date.

<sup>17</sup> Dr. Saha includes 7/30/2015 and 10/13/2015 in his Exhibit 3 and Table 2, both listing events unrelated to revenue announcements that could have an effect on MiMedx's adjusted stock price. I independently confirmed that these two announcement dates are confounded and also identified the 1/11/2016 revenue announcement as confounded.

For the days that were not confounded, I marked whether the revenue guidance surprise exceeded the upper limit of revenue guidance, was below the lower limit of the guidance range (“missed”), or fell within (“met”) the guidance range. Next, I performed an event study for the revenue announcements that were not confounded by other news. This report’s Exhibit 2 shows the results of the event study<sup>18</sup> on the days when revenue information was revealed to the market for the first time.<sup>19</sup>

18. After determining the statistical significance of the stock price changes, I concluded that all statistically significant adjusted price changes that are not confounded occur on days with guidance surprises. Furthermore, the direction of the adjusted stock price changes are 100% consistent with the direction of the revenue surprise.

**C. In contrast to Dr. Saha’s incorrect assertions, the result of a positive relationship between revenue surprises and stock price changes is consistent with common sense and the vast academic literature on the subject.**

19. After correcting Dr. Saha’s conceptual and factual errors, I determined that there is a positive empirical relationship between revenue surprises and stock price changes. This result is not only consistent with common sense but also consistent with the vast academic literature on the subject. Dr. Saha cites two unrelated practitioner articles and one published academic study to support his erroneous claim that “the absence of a quantifiable relationship between a company’s announcement of financial guidance or results and its stock price performance is widely documented in published research.”<sup>20</sup> He mischaracterized the publications he cited. Furthermore, he failed to mention the vast academic literature on the subject that established three main results: 1) there is a positive, reliable, and significant relationship between earnings surprises and stock price changes, 2) even after accounting for earnings

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<sup>18</sup> As in my first report, I used the Nasdaq Composite Total Return Index as the market index and the Nasdaq Biotechnology Index as the industry index.

<sup>19</sup> Four preannouncements include only qualitative revenue information, such as exceeding the upper range of the guidance. I interpret such events as positive revenue guidance surprises. I also note that, with respect to the dates in Dr. Saha’s Exhibit 2B, while my adjusted stock price changes differ from those reported by Dr. Saha (due to him using different industry and market factors), our results regarding statistical significance are comparable, with only one exception.

<sup>20</sup> The Saha Report, p. 17.



surprises, revenue surprises have a positive, reliable, and significant relationship with stock price changes, and 3) the relationship between revenues surprises and stock price changes is stronger for growth and R&D firms, such as MiMedx.

20. Dr. Saha mischaracterized the literature on the relationship between earnings or revenue surprises and stock price changes that he cited in his report. First, the focus of both of the practitioner articles that Dr. Saha cited is on whether companies should issue short-term (quarterly) earnings guidance at all, not whether there is a relationship between earnings or revenue surprises and returns. As such, neither of the practitioner articles provide support for Dr. Saha's erroneous claim.<sup>21</sup> Second, Dr. Saha also mischaracterized the results of the sole published and peer-reviewed research he cited: the Das, Kim, and Patro study does not find that there is a "lack of a direct relationship between guidance and stock prices" as Dr. Saha incorrectly asserts,<sup>22</sup> but rather that "the market reaction to management forecasts of quarterly earnings lasts significantly longer than the three-day window that has been generally employed in the prior literature."<sup>23</sup> In addition, the prior literature cited in the Das et al. study provided ample evidence that stock market reacts to managerial forecasts news.<sup>24</sup>

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<sup>21</sup> Specifically, the conclusion in the practitioner article by Hsieh, Koller, and Rajan is that "companies that currently provide quarterly earnings guidance should shift their focus away from short-term performance and towards the drivers of long-term company health ... Companies that don't currently issue guidance should avoid the temptation to start providing it and instead focus on disclosures about business fundamentals and long-range goals." (Peggy Hsieh, Timothy Koller, and S.R. Rajan, "The Misguided Practice of Earnings Guidance," *McKinsey on Finance*, March 1, 2006, <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-misguided-practice-of-earnings-guidance>.) Similarly, the other practitioner publication by Babcock and Williamson concludes that "Short-term earnings guidance is not wanted by long-term investors and it leads companies to make counterproductive, short-term decisions." (Ariel Fromer Babcock and Sarah Williamson, Quarterly Earnings Guidance - A Corporate Relic? *The Conference Board Director Notes*, March 2018, [http://www.shareholderforum.com/access/Library/20180300\\_ConferenceBoard-DirectorNotes.pdf](http://www.shareholderforum.com/access/Library/20180300_ConferenceBoard-DirectorNotes.pdf).)

<sup>22</sup> The Saha Report, p. 18.

<sup>23</sup> Somnath Das, Kyonghee Kim, and Sukesh Patro, "On the anomalous stock price response to management earnings forecasts," *Journal of Business Finance & Accounting*, Vol. 39, No. 7-8, 2012, pp. 905-935.

<sup>24</sup> For example, Patell's study concluded that "The results reported here indicate that these forecast disclosures were accompanied by significant price adjustments, from which the inference may be drawn that either the data presented in a management forecast, the act of voluntary disclosure, or both, convey information to investors." (James M. Patell, "Corporate forecasts of earnings per share and stock price behavior: Empirical test," *Journal of Accounting Research*, Vol. 14, No. 2, 1976, pp. 246-276). A study by Penman concluded that "the results of the excess returns tests indicate that information is actually conveyed to investors by the forecast announcement." (Stephen H. Penman, "An empirical investigation of the voluntary disclosure of corporate earnings forecasts," *Journal of Accounting Research*, Vol. 18, No. 1, 1980, pp. 132-160.)

- i. Existing academic literature finds that there is a positive, reliable, and significant relationship between earnings surprises and stock price changes*

21. In contrast to Dr. Saha's erroneous assertions, there is extensive academic literature published over several decades that consistently reports a positive, reliable, and significant relationship between stock price changes and financial performance news as measured by earnings surprise and revenue surprise. Ball and Brown's seminal study on this topic concluded that "the information contained in the annual income number is useful in that if actual income differs from expected income, the market typically has reacted in the same direction."<sup>25</sup> A 1977 paper on the matter found a "strongly significant association between the sign of a firm's unexpected quarterly earnings' change and the sign of a firm's risk-adjusted security return."<sup>26</sup> Many academic studies followed, confirming these results. In fact, this topic was included as one of the top four methodological topics in capital markets research of the 1980s and 1990s by Kothari's 2001 publication that surveyed over 500 studies.<sup>27</sup> Hence, a positive and significant association between earnings surprises and stock price changes around the earnings announcements is well documented in the academic literature.

- ii. Even after controlling for earnings surprises, revenue surprises and stock price changes show a reliably positive relationship*

22. Contrary to Dr. Saha's claim that the lack of positive association between revenue related events and stock price reactions is well documented in published studies,<sup>28</sup> existing academic studies reach the opposite conclusion: a reliably positive relationship between revenue surprises and stock price changes, above and beyond of the effect of earnings surprises. For example, Ertimur et al. found that

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<sup>25</sup> Ray Ball and Philip Brown, "An empirical evaluation of accounting income numbers," *Journal of Accounting Research*, Vol. 6, No. 2, 1968, pp. 159-178.

<sup>26</sup> George Foster, "Quarterly Accounting Data: Time-Series Properties and Predictive-Ability Results," *The Accounting Review*, Vol. 52, No. 1, January 1977, pp. 1-21.

<sup>27</sup> S.P. Kothari, "Capital markets research in accounting," *Journal of Accounting and Economics*, Vol. 31, 2001, pp. 105-231.

<sup>28</sup> The Saha Report, p.6.

“investors value more highly a dollar of revenue surprise than a dollar of expense surprise.”<sup>29</sup> The same authors also reported that “the relatively higher persistence of revenues motivates a stronger reaction to revenue surprises.”<sup>30</sup> Focusing on internet firms, Davis documented that “revenue announcements are highly associated with three-day market returns and provide information incremental to that contained in earnings announcements.”<sup>31</sup>

*iii. The relationship between earnings or revenues surprises and stock price changes is stronger for growth and R&D intensive firms, such as MiMedx*

23. In addition to the established result of a strong direct relationship between stock price changes and earnings and revenue surprises, there is evidence suggesting that the relationship is stronger for growth and R&D firms, i.e., firms similar to MiMedx. For example, Ertimur et al. reported that “Market participants seem to place more importance on the sales surprise for growth companies than for value companies.”<sup>32</sup> Kama’s published research found that “the influence of earnings surprises (revenue surprises) on stock returns is lower (higher) in R&D intensive companies,” and additionally, “in several contexts market reaction to earnings surprises is not higher than to revenue surprises.”<sup>33</sup>

24. The vast existing academic research reports findings that are contrary to Dr. Saha’s assertion of an absence of a quantifiable relationship between a company’s announcement of financial guidance or results and its stock price performance.

25. Overall, Dr. Saha’s first criticism of my initial report is without merit and is based on his erroneous analysis and facts. Once the conceptual and factual errors are corrected, the empirical evidence shows that revenue surprises and stock price changes are positively related which invalidates Dr. Saha’s criticism of the methodology used in my first report to value the fraud. Furthermore, the positive relation

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<sup>29</sup> Yonca Ertimur, Joshua Livnat, and Minna Martikainen, “Differential Market Reactions to Revenue and Expense Surprises,” *Review of Accounting Studies*, Vol. 8, 2003, pp. 185-211.

<sup>30</sup> Ibid.

<sup>31</sup> Angela K. Davis, “The Value Relevance of Revenue for Internet Firms: Does Reporting Grossed-up or Barter Revenue Make a Difference?” *Journal of Accounting Research*, Vol. 40, No.2, 2002, pp. 445-477.

<sup>32</sup> Yonca Ertimur, Joshua Livnat, and Minna Martikainen, Ibid.

<sup>33</sup> Itay Kama, “On the Market Reaction to Revenue and Earnings Surprises,” *Journal of Business Finance & Accounting*, 36(1-2), 2009, pp. 31-50.

between revenue surprises and stock price changes is widely supported by the vast academic literature on the subject.

**V. I find no evidence that the February 20, 2018 announcement is confounded, as Dr. Saha asserts in his report without any valid support**

26. Dr. Saha makes the unsupported assertion that an event study analysis is incapable of measuring the effect of the disclosure on February 20, 2018 and valuing the fraud purportedly due to confounding news on that day.<sup>34</sup> My opinion, which I discussed in more detail in my first report, remains unchanged: the February 20, 2018 disclosure is appropriate for valuing the price inflation resulting from the fraud.

27. The Saha Report does not specify any confounding news on the date.<sup>35</sup> Instead, Dr. Saha claims that “[t]his disclosure provided little clarity to the marketplace about the reasons for the delayed financial results or the reasons for the Audit Committee’s actions” creating “considerable uncertainty about MiMedx’s viability as an ongoing business.”<sup>36</sup> This assertion fundamentally misrepresents a standard practice in my profession to use partially corrective disclosures when measuring price inflation. The February 20, 2018 announcement is the *first* partially corrective disclosure of “an internal investigation into current and prior-period matters relating to allegations regarding certain sales and distribution practices.”<sup>37</sup> The announcement of the internal investigation put investors on notice about the potential existence of the revenue recognition issues that led to the restatement of financials and were later proven fraudulent at trial. This fact is not disputed by the Saha Report. As Dr. Saha admitted, the uncertainty was a direct result of the announcement of the internal investigation and is, therefore, not

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<sup>34</sup> The Saha Report, p. 23.

<sup>35</sup> One piece of news released on February 20, 2018 cited by Dr. Saha is “postponing the release of its financial results.” It is my opinion that the postponement of financial results for Q4 2017 and FY 2017 is not confounding, because it was a direct result of the internal investigation.

<sup>36</sup> The Saha Report, p. 24-25.

<sup>37</sup> MiMedx February 20, 2018 Press Release “MiMedx Postpones Release of its Fourth Quarter and Fiscal Year 2017 Financial Results.”

confounding information.<sup>38</sup> Based on my experience, any uncertainty related to partial nature of a corrective disclosure should not be considered as a confounding factor.

28. Overall, Dr. Saha's second criticism is without merit – he could not and he did not identify any confounding information coinciding with the internal investigation announcement and instead mischaracterized a direct effect of this announcement as confounding news. Therefore, my opinion that the February 20, 2018 disclosure is appropriate for valuing the price inflation due to the fraud proven at trial remains unchanged.

**VI. I disagree with Dr. Saha's assertion that March 17, 2020 is a more appropriate corrective disclosure date than February 20, 2018. Nevertheless, using his preferred date and applying his investor loss methodology, I calculated the investor loss to be between \$40.5 million and \$80.5 million, exceeding the harm estimate of \$34.6 million in my first report.**

**A. Dr. Saha's assertion that March 17, 2020 is a more appropriate corrective disclosure to value the fraud is incorrect.**

29. Dr. Saha states in his report that using the February 20, 2018 announcement as a corrective disclosure is incorrect because the magnitude of the revenue inflation was not known until March 17, 2020. This statement by Dr. Saha is simply incorrect. Based on my experience, February 20, 2018 is a partial corrective disclosure of the revenue-related information that was revealed more fully by MiMedx on March 17, 2020. It is standard practice in my profession to use partially corrective disclosures when measuring price inflation.

30. As I discussed in my first report, the February 20, 2018 internal investigation directly led to the uncovering of the revenue inflation fraud. Dr. Saha discounts the importance of the February 20, 2018 disclosure of the internal investigation, arguing that “on that day *neither* the revenue inflation of

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<sup>38</sup> Dr. Saha also argues that high short interest followed by “short squeezes” caused a prior stock price increase that accentuated the stock price decline on February 20, 2018. He does not offer any empirical evidence of actual “short squeeze” or market commentary mentioning such “short squeezes.” His argument is belied by contemporaneous analysts' valuations that are generally in line or above the MiMedx stock price at the time. Analysts reports I reviewed do not mention a short squeeze as a reason for stock price increases. See for example, 2017 reports by Piper Sandler, Craig Hallum, and Lake Street analysts who have a price target for MiMedx exceeding the concurrent market price. The only analyst with a sell rating and price target below MiMedx stock price levels during 2017 is UBS and even UBS does not mention any instances of short squeezes as a determinant of MiMedx's stock price.

\$8.26M for 2015 *nor* the \$70.7M revenue inflation for 2014-17 was announced.”<sup>39</sup> Dr. Saha also argues that “there was *no* specific news about revenue inflation announced by the company on that day.”<sup>40</sup> However, it is a fact, that the Saha Report did not dispute, that the March 17, 2020 Form 10-K description of conduct in connection to revenue misrepresentations from the four distributors proven fraudulent at trial is featured prominently in the first pages documenting the findings of the internal investigation launched in 2018.<sup>41</sup> It is also a fact that the Saha Report did not dispute that the disclosure on February 20, 2018 announced the launch of this investigation establishing a causal link between the announcement of the internal investigation and the discovery of the revenue fraud from the four distributors proven fraudulent at trial.

31. Furthermore, Dr. Saha’s claim of the lack of any specific news about revenue inflation in the February 20, 2018 announcement is incorrect on two separate accounts. First, the announcement clearly states that the object of the investigation – sales and distribution practices – are inherently related to revenue recognition and revenue inflation. Second, as I documented in Section IV.A. of my first report, there were numerous disclosures following the partial initial disclosure on February 20, 2018 that directly link this announcement with the fraud proven at trial and resulted in significant MiMedx stock price declines. The Saha Report did not dispute these facts as contained in my first report.<sup>42</sup> These facts make Dr. Saha’s argument, that the initial partial disclosure on February 20, 2018 did not contain the full details of the fraud, irrelevant. Indeed, Dr. Saha appears to agree that “the disclosure of the misrepresentation can be partial.”<sup>43</sup>

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<sup>39</sup> The Saha Report, p. 24.

<sup>40</sup> The Saha Report, p. 24.

<sup>41</sup> MiMedx Form 10-K filed March 17, 2020.

<sup>42</sup> The Minkin Report, pp. 8-9.

<sup>43</sup> Dr. Saha’s 2007 article in *The Business Lawyer* asserts: “the disclosure of the misrepresentation can be partial. For example, suppose a firm simply announces that it will restate its prior years’ financials without quantifying the extent of the restatement. Often a firm’s share price falls, in many cases quite sharply, merely in response to the announcement of a restatement. Typically, the class action plaintiffs end the class period on the day of the announcement of the intent to restate. That is, they argue that the share price on the day of the announcement reflects the “fair value” of the stock and should be used in calculating damages. However, in this example, the restatement announcement, although “corrective,” is by no means a full disclosure. In the subsequent weeks and months the firm may provide further details about the extent of the restatement and full disclosure occurs only after the firm finalizes its restatement.” The full citation to the article is: Allen Ferrel and Atanu Saha, “The Loss

32. Finally, it is simply wrong to consider March 17, 2020 as a more appropriate disclosure date in light of the amount of information that was already publicly available before this date. Besides the series of partial disclosures the company made related to the investigation, the Justice Department unsealed the indictment on November 26, 2019 accusing MiMedx of the fraud that was proven at trial.<sup>44</sup> Separately, the Securities and Exchange Commission filed a civil suit against MiMedx, accusing them of conducting a “pervasive” accounting fraud from early 2013 to late 2017.<sup>45</sup> Therefore, my opinion remains unchanged—February 20, 2018 is the appropriate date to measure the price inflation resulting from the conduct proven fraudulent at trial, and March 17, 2020 is not.

**B. Nevertheless, applying the investor loss methodology Dr. Saha indicated as consistent with the sentencing guidelines, I calculated the investor loss to be between \$40.5 million and \$80.5 million, exceeding the harm estimate of \$34.6 million in my first report.**

33. Without offering any MiMedx-specific evidence, Dr. Saha claims that its stock is not traded in an efficient market,<sup>46</sup> and implements a calculation that, as he characterized it, “is generally consistent with an approach referenced in the Sentencing Guideline. See United States Sentencing Commission, Guidelines Manual, §3E1.1 (Nov. 2018), specifically §2B1.1, comment. (n.3)(F)(ix).”<sup>47</sup> After reviewing the Sentencing Guideline document, I concluded that Dr. Saha’s selective implementation of the methodology contained in the Sentencing Guideline document introduced a bias that caused him to vastly understate harm to investors.

34. Specifically, the Sentencing Guideline referred to by Dr. Saha states:

*“In a case involving the fraudulent inflation or deflation in the value of a publicly traded security or commodity, the court in determining loss may use any method that is appropriate and*

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Causation Requirement for Rule 10b-5 Causes of Action: The Implications of *Dura Pharmaceuticals, Inc. v. Bruodo*,” *The Business Lawyer*, Vol. 63, 2007, pp. 163-186.

<sup>44</sup> “MiMedx Ex-Senior Executives Indicted on Fraud Charges”, *Dow Jones Newswires*, November 26, 2019, 12:50.

<sup>45</sup> *Ibid.*

<sup>46</sup> Dr. Saha references a report that provides selected descriptive statistics of some characteristics which do not prove whether, in general, all stocks traded on OTC are traded in an inefficient market and, in particular, whether MiMedx stock price changes can be characterized as being consistent with market inefficiency.

<sup>47</sup> The Saha Report, p. 35, footnote 59.

*practicable under the circumstances. One such method the court may consider is a method under which the actual loss attributable to the change in value of the security or commodity is the amount determined by—*

- (I) calculating the difference between the average price of the security or commodity during the period that the fraud occurred and the average price of the security or commodity during the 90-day period after the fraud was disclosed to the market, and*
- (II) multiplying the difference in average price by the number of shares outstanding.*

*In determining whether the amount so determined is a reasonable estimate of the actual loss attributable to the change in value of the security or commodity, the court may consider, among other factors, the extent to which the amount so determined includes significant changes in value not resulting from the offense (e.g., changes caused by external market forces, such as changed economic circumstances, changed investor expectations, and new industry-specific or firm-specific facts, conditions, or events).”<sup>48</sup>*

35. Dr. Saha selectively calculated only the average stock price in the 90-day window after his proposed corrective disclosure day of March 17, 2020.<sup>49</sup> Dr. Saha used the closing price on March 17, 2020 as an estimate of the inflated value of the security prior to the corrective disclosure. Had Dr. Saha used the average price of MiMedx stock price during the period when the stock price was artificially inflated as discussed in my first report, i.e., starting on February 23, 2016 and ending on February 20, 2018 (the first corrective disclosure), the resulting difference would have been \$6.58 (\$10.69 – \$4.11). Controlling for “the extent to which the amount so determined includes significant changes in value not resulting from the offense,”<sup>50</sup> I used the same methodology as in my first report to calculate the portion of the \$6.58 price differential that is due to the artificial inflation resulting from the fraud proven at trial. I

<sup>48</sup> United States Sentencing Commission, Guidelines Manual, §3E1.1 (Nov. 2018), §2B1.1, comment. (n.3)(F)(ix).

<sup>49</sup> In his calculation, Dr. Saha used 90 trading days when calculating his average price after March 17, 2020. Had he instead used closing prices during a 90 calendar day window, his shareholder harm estimate would have been 17 times higher, i.e., about \$3.3 million.

<sup>50</sup> United States Sentencing Commission, Guidelines Manual, §3E1.1 (Nov. 2018), §2B1.1, comment. (n.3)(F)(ix).



determined the appropriate inflation due to the fraud alone to be \$0.76 per share. Following the calculation described in the Sentencing Guideline, I then multiply \$0.76 by 105.955 million shares, the minimum shares outstanding during the inflation period.<sup>51</sup> The aggregate investor loss resulting from this approach is \$80.5 million. If I instead multiply the \$0.76 per share inflation by the net shares purchased during the period between February 23, 2016 and February 20, 2018 as shown in Exhibit 5 of my first report and also used by Dr. Saha, the resulting aggregate investor loss is \$40.5 million. Hence, correcting Dr. Saha's calculations in two different ways results in estimates of investor loss that exceed the investor loss estimate of \$34.6 million in my first report.

36. Overall, the opinions in my first report are not affected by Dr. Saha's unfounded criticisms. In fact, after I corrected Dr. Saha's many conceptual and factual errors, the results implied by such corrected analyses further support my original findings of investor loss of \$34.6 million.



2/19/2021

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Artur Minkin, Ph.D.

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Date

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<sup>51</sup> Bloomberg.